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Genesis of the structure and the phase and elemental compositions of an aluminum oxide catalyst in the isomerization process of n-butylenes

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Abstract

An investigation of the changes in the characteristics of the porous structure, phase, and elemental compositions of catalyst samples for the isomerization of n-butylenes using a set of physicochemical methods has been conducted. In has been established that under hydrothermal conditions of the isomerization process, aluminum oxide recrystallization takes place, resulting in a decrease of its specific surface value and a displacement of the maximum of the distribution of pore diameters to the region of greater values. A porous structure transformation scheme has been suggested while operating the isomerization catalyst for n-butylenes. It has been supposed that the partial phase change of γ-Al2O3 into δ-Al 2O3 occurring under industrial conditions of the isomerization of n-butylenes is caused by an accumulation of metal compound admixtures supplied with the feed flow. © 2009 Pleiades Publishing, Ltd.

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